

Thanks to pet foods, Gulf Coast fishery catches have changed

From Trash to Treasure

THIS ARTICLE describes the pet food fishery of the north-central Gulf of Mexico. Herein are related the "whats, whys and hows" of the rise of a fishery, initiated only eight years ago, to the point where it utilized most of the industrial fish landed in the region in 1959, exclusive of menhaden, and changed the designation of a fishery resource from "trash" to "valuable raw material."—THE EDITOR.

by J. R. THOMPSON

and W. A. HASKELL

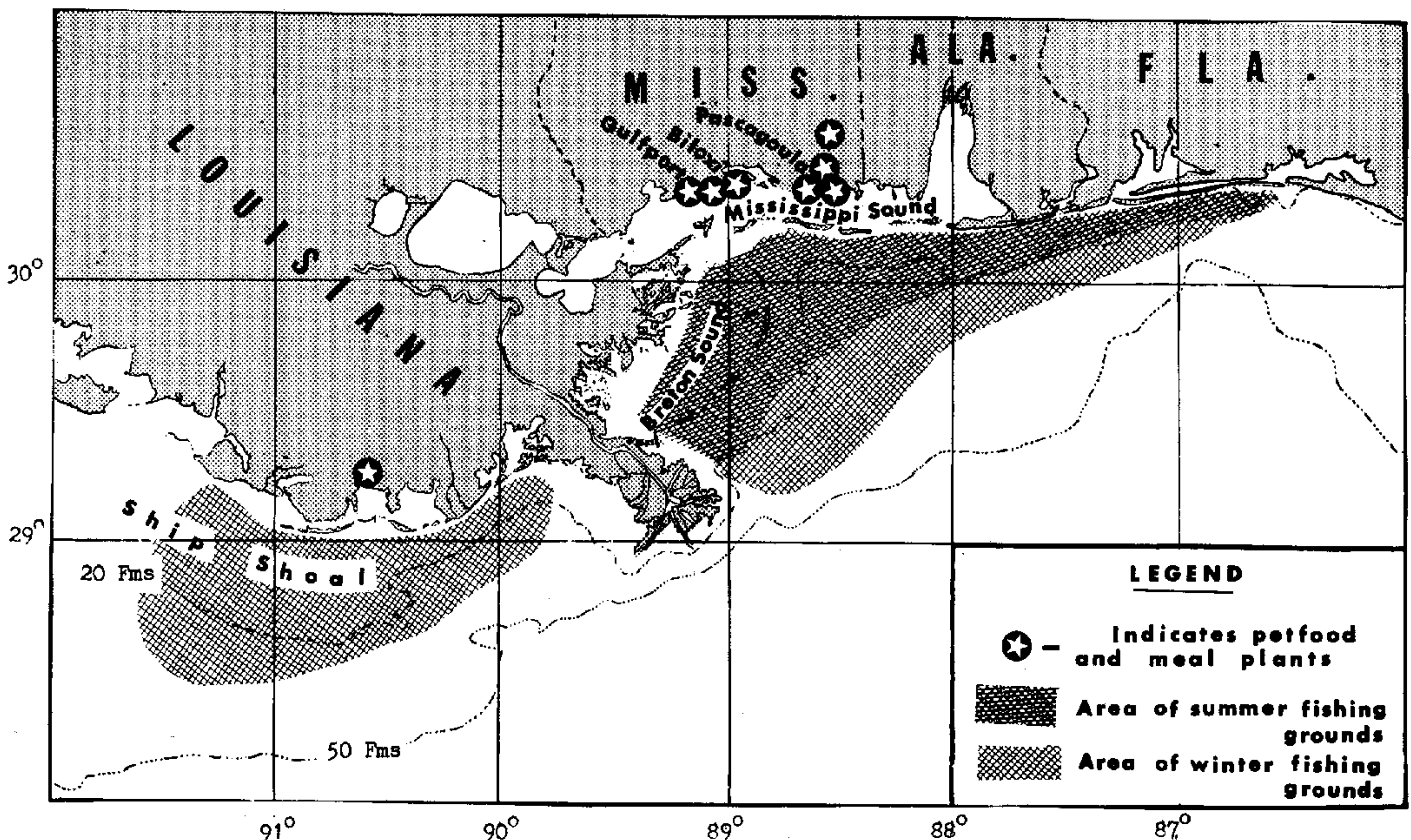
U. S. Bureau of Commercial Fisheries, Pascagoula, Miss.

CONTIGUOUS to the coasts of the Gulf States, and receiving a rich nutrient supply from the Mississippi River, are hundreds of square miles of relatively shallow water underlain by muddy bottoms. These long have been the site of a profitable and famous shrimp fishery.

For over 40 years these fishermen have been dragging their trawl nets over the bottoms. In addition to the highly sought shrimp, their trawls have scooped in quantities of fish that, because of the large number of species represented in the catches and the small average size of the in-

dividuals, were unmarketable prior to 1952.

These fish were considered a nuisance by the shrimp fishermen, were termed "trash" and were discarded. So numerous were the fish in some parts of the shrimping grounds that they seriously interfered with shrimp-



Site of the Gulf Coast pet food fishery. Rich grounds on either side of the Mississippi Delta are being fished to provide raw material for the production of food for the nation's estimated 26 million pet cats. Original production was centered in the waters immediately adjacent to Pascagoula (upper center). From there, the fast-growing fleet has fanned out so that it now covers the area contiguous to the states of Louisiana, Mississippi and Alabama as well as portions of the coasts of Texas and Florida in waters ranging in depth from 3 to 30 fathoms (18 to 180 feet).

ing activities, and these localities of high fish concentration, once noted, were avoided by the shrimp fleets.

Pet Foods to the Rescue

Concerned about the yearly wastage of tons of fish—caused not only by the practice of discarding fish from the shrimp trawl catches, but also by the nonutilization of an extensive natural resource—the Gulf Coast people cast about for markets for the nonutilized fish. They found one such market in the industrial utilization of trawl fish by the pet food industry. As a result, today the grounds once trawled on a commercial basis exclusively for shrimp are also the site of an extensive commercial trawl-fish fishery.

Examination of the catches of the pet food trawlers has been carried out by biologists of the U. S. Bureau of Commercial Fisheries in an attempt to understand more fully the biological

nature of the resource. These studies, although far from complete, have indicated that, year in and year out, approximately 76% of the average trawl catch consists of small croakers, spot, and white sea trout.

Does Not Harm Sport Fishing

These fish, even when fully mature, are of small size in Gulf waters and are not considered suitable for direct human consumption or for sport fishing purposes.

The remaining 24% of the average catch includes, seasonally,

some 150 species, but those fish normally thought of as food fish or sport fish are generally absent, even from this smaller percentage. The trawl is a selective gear and is not suited to the capture of the fast-swimming, highly maneuverable food fish and sport fish of the region.

Pet food plants originally sought to utilize the fish caught incidental to shrimping operations by using the shrimp fleet as a direct source of supply. But this plan, although theoretically sound, was subject to serious practical drawbacks: Fishermen continued to concentrate on areas where clean catches of shrimp could be obtained, and they avoided areas of high fish concentration; the supply of fish was not only limited in extent, but was extremely erratic and difficult to control, and the fish, usually being left on deck until after the shrimp were cared for, were often of poor quality when landed.

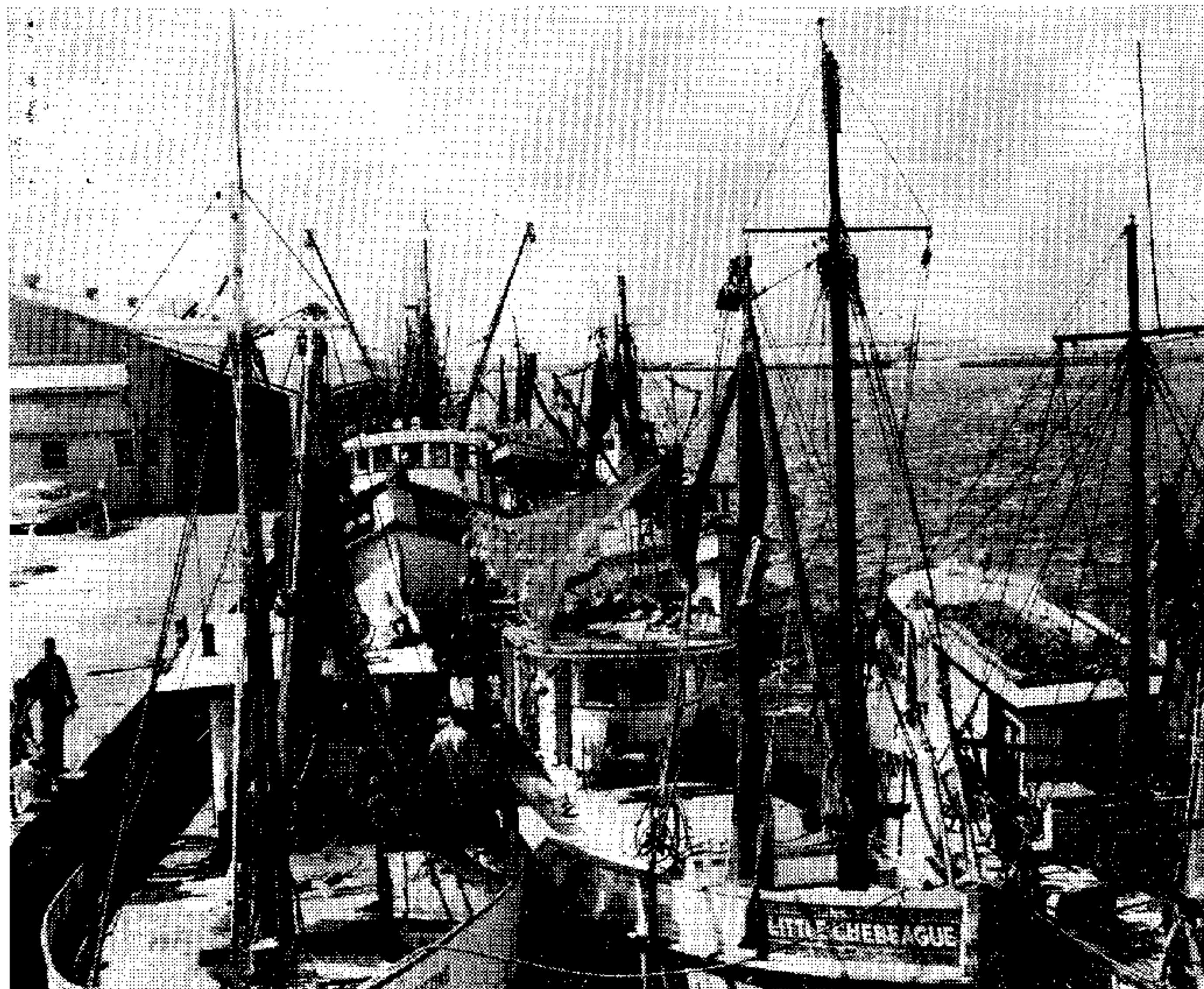
Turn to Their Own Fleets

As a result, the pet food plants turned to the utilization of fleets of vessels fishing exclusively for pet food fish. The vessels of the first pet food fleets were mainly old shrimp boats of small size and limited range, capacity and seaworthiness. These boats were forced to fish close to the plant and production was controlled by the vagaries of the weather.

Gradually, however, the original vessels became unserviceable or unable to compete, and they were replaced by newer and more efficient vessels. Today the fleets contain some of the most mod-

Industrial Utilization Surpasses Food Use

IN 1959, for the first time in the history of this country's fisheries, over one-half of all fish landed by commercial vessels were destined for so-called "industrial utilization"—processing into meals, fish flours, oils, solubles and pet foods. The pet food industry has played an important role in this increased industrial utilization, and this industry and its fisheries have become interconnected to the apparent advantage of both.



Vessels of the pet food plant at the dock. A wide variety of vessel types is represented in the present fleet, but most vessels are of either "Biloxi" or "Florida" design. "Biloxi" boats are characterized by a stern-placed deckhouse, whereas "Florida" trawlers are built with the deckhouse placed forward of the midline. The average vessel in the pet food fleet today was built originally for the shrimp fishery, measures approximately 50 feet in length, is capable of carrying between 20 and 40 tons of fish, and is 12 years of age. All pet food trawlers are diesel powered.

ern vessels of the coastal fisheries of the Gulf.

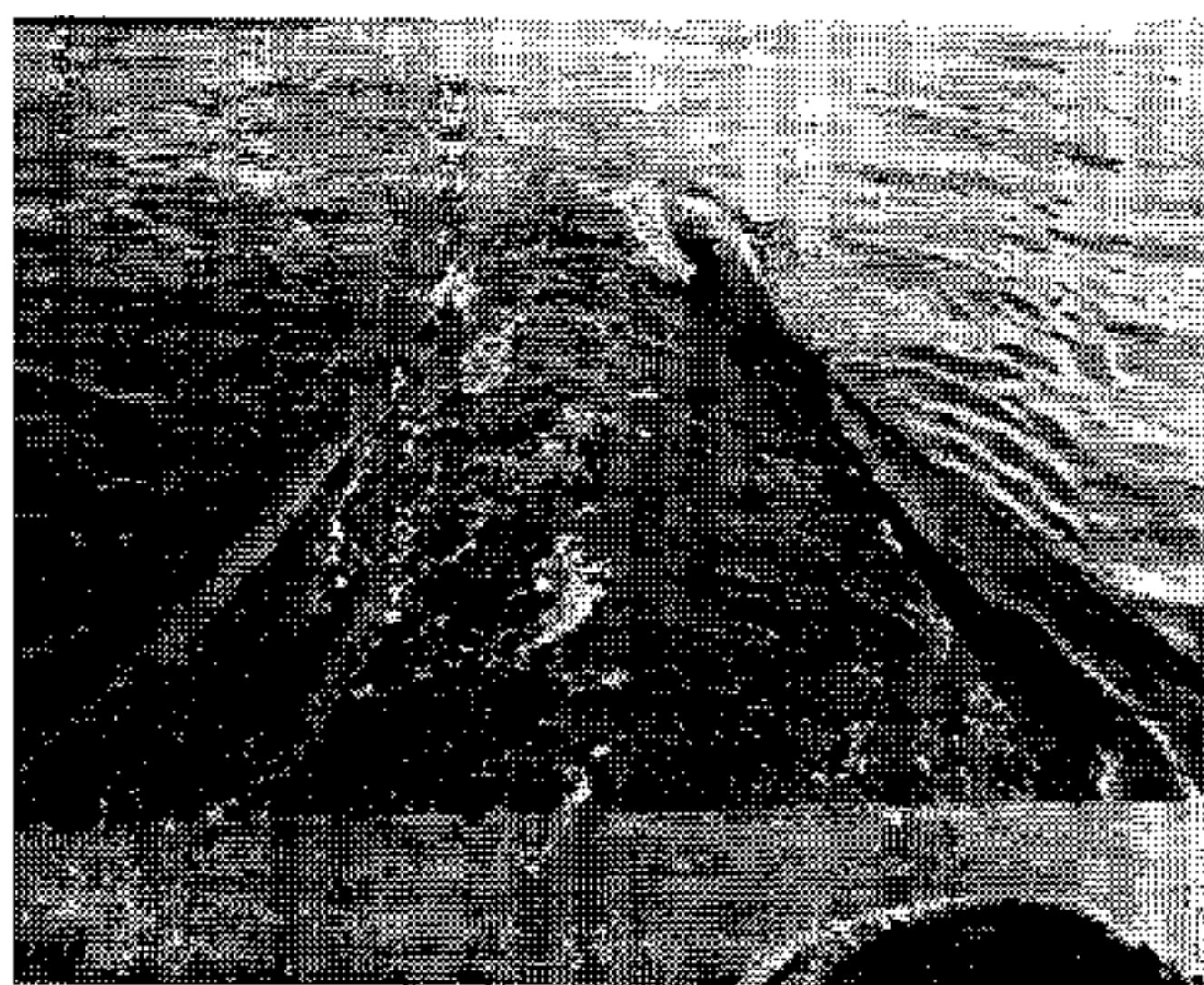
The vessels are operated on rigidly controlled schedules, designed to provide for a relatively level and continuous supply of fish, and the catch landed is subjected to rigid standards to assure quality. This system of regulated operation has worked out to the apparent satisfaction of both plants and vessel owners.

Fishery Methods and Equipment

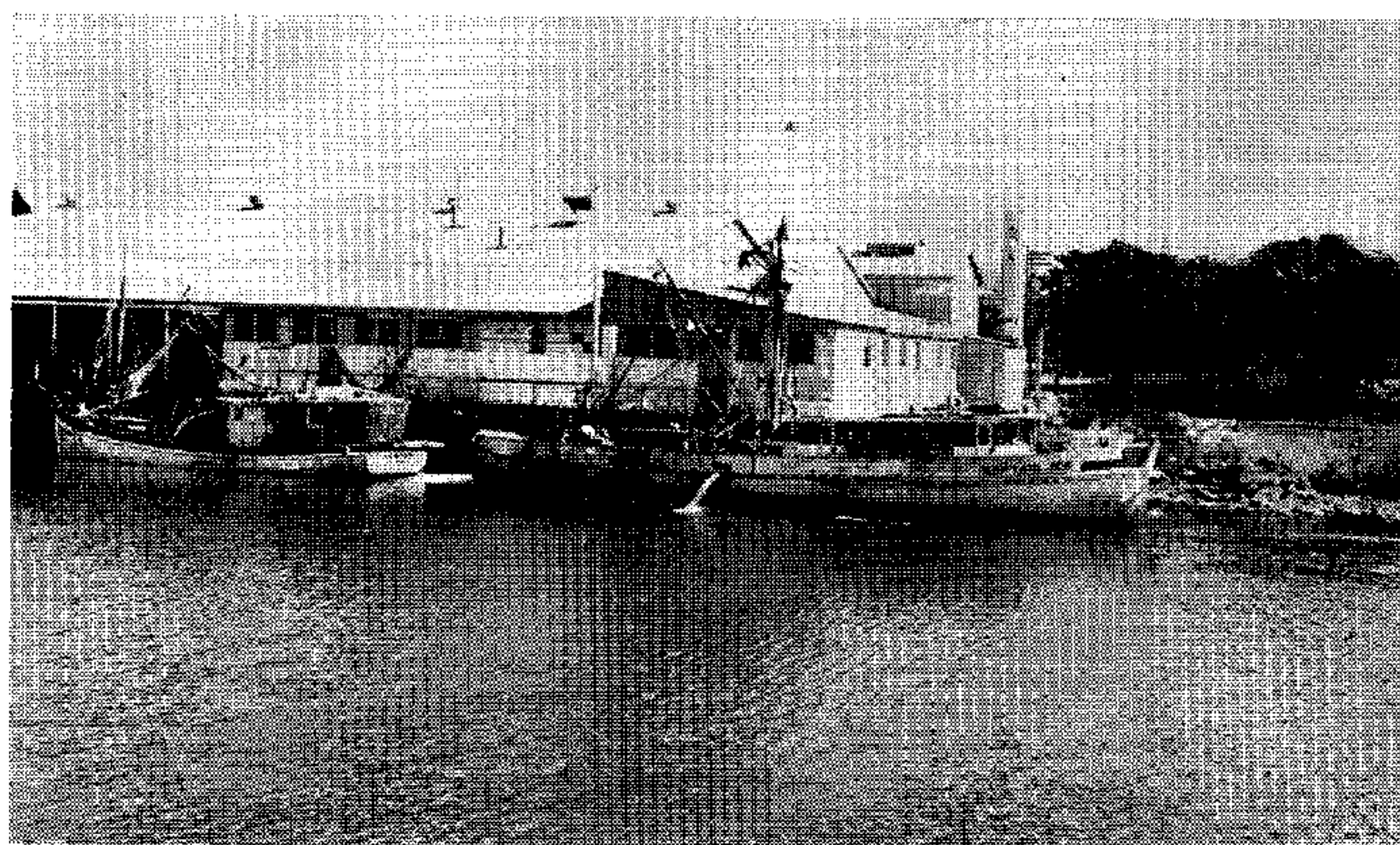
The methods and equipment utilized by pet food fishermen can be explained best by following the course of events aboard a trawler from the time it leaves the dock to the time that the catch is landed.

Once the boat has been fueled, and groceries and miscellaneous supplies sufficient for an average trip of three to five days have come aboard, it moves to the ice dock. Here 300-pound cakes of ice are run through a crusher, and the resultant pebble-sized pieces are blown into the hold of the vessel through a flexible metal hose. In summer months, warm water and air temperature often make necessary an initial quantity of ice equal to the quantity of the expected catch.

The boat, fully fitted out, then heads for the fishing grounds—located from 3 to 48 hours away



Setting the trawl from a "Biloxi-type" trawler. Wires from the forward corners of the net lead to "doors" or trawl boards which are towed at an angle and serve to hold the mouth of the net open. Wires from the trawl boards lead to the winch aboard the vessel.



Established in 1952, this large pet food plant at Pascagoula, Miss., was the original processing plant for trawl-caught "industrial fishes." It has undergone extensive modernization several times since.

—at average vessel speeds of 8 to 10 knots. En route, the crew makes last-minute adjustments to the gear and listens attentively to reports of fishing conditions coming over the radio-telephone receiver from other trawlers on the grounds.

Once the grounds are reached, the first trawl drag commences. The trawl net, which has been laid out on the deck, preparatory to setting, is put over. Then, as the vessel moves ahead, the winch is freed, and the required amount of wire "warp" is let out so that the trawl will reach and fish on the bottom.

The trawl is dragged slowly over the bottom for a period varying from 30 minutes to three hours. Then the trawl warp is wound in on the winch until the trawl doors are on board. With the vessel slowly circling to keep the floating net away from the propeller, the terminal portion of the trawl is hoisted aboard and suspended from the boom. By pulling the ends of a line fastened about the end of the trawl bag, the catch, which may consist of as much as five or six tons of fish, is dumped either directly into the hold or on deck.

In the latter case, the catch is sorted roughly, salable food fish and shrimp are stored sep-

Plan International Conference

The U. S. Bureau of Commercial Fisheries is assisting the Food and Agriculture Organization of the United Nations in planning an international conference on fish in animal and human nutrition to be held in Washington, D. C.

While this conference does not take place until September, 1961, the U. S. Bureau proposes the early establishment of regional industry consultation groups. These will be kept informed of all planning and progress. The groups will be asked to make suggestions and recommendations relating to the conference and to preconference planning. It is expected that the regional group members will, in turn, acquaint other regional processors and fishermen with the objectives and progress in planning the sessions.

Members of the pet food industry who have a special interest in fish ingredients may be interested in participating in the regional consultation meetings. If so, it is suggested they write to the U. S. Department of Interior, Bureau of Commercial Fisheries.

arately, and extraneous matter discarded. The remaining catch is then shoveled into the hold and iced down. Where the catch is dumped directly into the hold, sorting is accomplished later at the plant. The trawling procedure continues night and day until the hold is full, supplies run out, or the fish can no longer be kept without danger of quality loss, at which time the trip home commences.

Process Within the Plant

At the smaller plants, fish are shoveled from the hold of the vessel into a hopper and are then moved into the plant on a conveyor. At the larger plants, a suction pump connected to a flexible metal hose is used to remove the fish quickly and with little effort. The fish then pass along a conveyor in the plant where women sort the catch. All food fish and shrimp are removed, given back to the vessel operator, and sold on the seafood market. Extraneous matter, including dead shell, crabs, excessively spiny fish and sea-

weed, is also removed. The remaining fish continue along the conveyor line, are processed, and otherwise readied for market.

Expenses of the trawler—fuel, groceries, ice—are paid from the money received from the sale of the fish, and the balance is split into “shares.” As a rule, the captain receives from 1 to 1½ shares, crew members one share each, and a final share is laid aside for the boat—to cover expenses of normal maintenance and repair. If the owner is not the operator, a further one-half to one share is usually allotted to the owner. Following this system, pet food fishermen can expect to earn, generally, from \$3,000 to \$5,200 a year.

Contrasted with most other fisheries of the Gulf, the pet food fishery occupies an advantageous position. Trips are regulated and relatively equal in duration; the fishery extends throughout the year rather than only seasonally; the grounds utilized are approximately the same the year-around, unlike the grounds of the shrimp

fishery which change from season to season, and, in aggregate, include the entire rim of the Gulf. The fisherman is assured a market and a relatively unvarying price for his catch. To date, there has been little difficulty in finding men and vessels to supply the fish.

Recently, several vessels of the fleet have installed refrigeration systems. With this means of preserving the catch, with the increased capacity and range of the vessels now entering the fleet, and with a continuation of the current tendency of the industrial fish industry of the Gulf Coast to expand its production, pet food fishing in the future undoubtedly will be conducted over extensive additional areas—in waters both deeper and more distant than those now fished. Explorations by the M/V Oregon, research ship of the U. S. Bureau of Commercial Fisheries, have disclosed additional nonutilized fish resources in deeper waters that may well surpass the shallow-water resources in terms of available fish.

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